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ABSTRACT

Experts in technical and vocational education and training (TVET) from 11 countries participated in a UNESCO International Workshop. The countries were: Australia, Brazil, Canada, Colombia, India, Jordan, Kenya, Mexico, Poland, Republic of Korea, and South Africa. Workshop participants identified a range of issues relating to improving the contribution of TVET to rural development. Rural communities were defined as having more widely dispersed people and production; restricted access to basic services due to a lack of critical mass; and focus on cultivating or extracting primary products. The following recommendations were made: (1) future strategies for TVET development and delivery should involve the community, provide for relevance to rural situations, and include flexible course structures and delivery strategies; (2) UNESCO Member States should develop and implement appropriate strategies to popularize TVET; (3) Member States should review levels of literacy and numeracy achieved from school education to ensure students were prepared to use technologies required in TVET programs; (4) TVET subjects should be integrated into primary and secondary curricula for all students; (5) TVET curriculum should be developed to meet competency standards and provide for worker mobility; (6) TVET authorities should ensure teachers are suitably qualified; (7) learning centers should be established and funding sources pursued; and (8) a range of delivery modes should be adopted. (Contact addresses at UNESCO are appended.) (YLB)

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Contents

Technical and Vocational Education for Rural Development 1

UNEVOC information in Web 6

In brief 7

TECHNICAL AND VOCATIONAL EDUCATION FOR RURAL DEVELOPMENT: DELIVERY PATTERNS

Neil Black

A UNESCO *International Workshop on Technical and Vocational Education for Rural Development: Delivery Patterns* was held in Ottawa Canada from 17-20 September 1996. The workshop was organized as an activity under the UNEVOC project and was hosted by the Association of Canadian Community Colleges (ACCC). Experts in technical and vocational education and training (TVET) from the following eleven countries participated: Australia, Brazil, Canada, Colombia, India, Jordan, Kenya, Mexico, Poland, Republic of Korea and South Africa.

The objectives of the workshop were to:

- review the general trends concerning rural development in countries that are at different development stages (e.g. industrialized, newly industrialized, developing and least developed countries, as well as countries in transition to market economy);
- redefine the role to be played by TVET in rural development;
- identify successful «formal and non-formal delivery patterns» of TVET in the rural areas; and
- formulate recommendations on future strategies to be considered by UNESCO's Member States.

Background

Current trends in the world such as globalization of trade, rapid advancement of technologies, urbanization in developing nations and migration of person power within and between countries have a significant impact on rural life, which is most evident in the developing countries. Some countries' experience have shown that establishing rural industry and small and medium sized business enterprises play an important role in the campaign of poverty erasion, in addition to the modernization of agro-technology.

TVET has long been considered a crucial means of providing competent person power for socio-economic development in rural areas. In many cases, TVET is delivered mainly by the formal education system. However, various delivery patterns of TVET beyond the formal education system also exist and play an ever increasing supplementary role. Facing the above-mentioned changes in today's economic life, however, a serious question has been raised, i.e. how to deliver TVET in an effective and efficient way in order to improve rural life and to facilitate the process of development.

The drift from rural areas to the cities and the declining contribution by agriculture to Gross Domestic Product is an issue for countries worldwide. However, while halting the drift is seen as highly desirable, there are particular issues that need to be understood before effective strategies can be applied. Rural communities by the very definition of 'rural', are more dispersed and access to basic services such as public transport and communications technology is restricted. Also basic educational levels are usually lower in rural areas.

On the other hand, rural people have many inherent qualities such as work ethic, mutual support and an ability to innovate which can at least partly compensate for the adverse factors.

Other vitally significant trends are towards recognition that rural development must be environmentally sustainable and that education must be seen as a lifelong pursuit.

Discussion and recommendations

Workshop participants identified a range of issues relating to improving the contribution of TVET to rural development. A summary of the discussion and the final recommendations are included below.

Defining 'Rural' Communities

It is difficult to give a single, all purpose definition of rural communities. The concept differs widely between nations, depending on the context and purposes. The following recommendation was formulated:

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That in the context of TVET, 'rural communities' be defined in terms of the following features:

- ***People and production are much more dispersed than in urban areas;***
- ***Access to basic services is restricted due to a lack of critical mass;***
- ***There is a focus on cultivating or extracting primary products.***

A further related recommendation is -

That TVET for rural communities should be relevant to a wide range of activities including primary industry production and processing, manufacturing, tourism and the arts and basic business supporting the rural towns.

Principles Guiding Future Strategies

Workshop participants agreed that there are three basic principles that should underpin any future strategies to enhance the impact of TVET on rural development and recommend the following.

That in relation to future strategies for the development and delivery of TVET in rural areas, the following principles be adopted:

community involvement **in planning and development is critical for success;**

programmes must be *relevant* for *rural* communities and situations;

course structures and delivery strategies need to be *flexible* so as to meet the needs of rural people.

Popularization of TVET

A major issue that is common across all nations is the lower status with which TVET is held generally vis-a-vis a university education. However, there is more and more evidence in today's labour market, particularly in developed countries, that the likelihood of gaining employment with a technical qualification is higher than with a general university degree. Also, people who complete a TVET programme which includes extensive work experience are generally more likely to be adequately equipped for self-employment in a rural community than many graduates from academic programmes.

Evidence now exists in developed countries that there is a significant percentage (average of from 10-20% but higher in some programmes) of university graduates enrolled in TVET programmes. Some are seeking to retrain or change their career, but many are young people seeking to enhance their employment prospects. Where this situation exists, governments should be reviewing education policies as well as promotion strategies. Whilst it will be argued by some that any education is beneficial, when resources for education are limited, governments need to allocate these resources for rural communities in a way which best assists rural development.

Hence the following recommendation is made:

That UNESCO Member States develop and implement appropriate strategies to popularize TVET.

Some suggested strategies are -

- Introduce career education, guidance and counselling at all levels of general education and ensure career counsellors have a strong empathy with vocational careers.
- Use role models.
- Use appropriate statistics such as TVET course graduate employment rates.
- Publicity mediums, e.g.: advertising signs; exhibitions; media campaigns; personal involvement; TV & radio interviews; cable TV; Internet.
- Lobbying - using industry leaders.
- Emphasize the excellence of vocational training.
- Ensure delivery of a high quality service.
- Provide information about
  - what is happening
  - what is available
- Publicize earning potential of TVET occupations.

Levels of Literacy & Numeracy

Adequate levels of literacy and numeracy within rural communities for undertaking TVET programmes are seen as critical by both developing and more developed countries. In all countries, the average literacy and numeracy levels in rural communities are lower than for their urban counterparts. This is seen as a barrier that must be overcome in order to gain the potential benefits of TVET for rural development.

The situation is exasperated by the fact that the level of technology required in TVET programmes in order to prepare people for today's jobs is increasing dramatically in all countries and a higher level of literacy and numeracy preparation than required in the past is demanded to use the technologies required. Therefore even in developed

countries, a higher level of general education is necessary in order to cope with TVET programmes and a vocational career. However, many argue that the school systems in these countries are not fully addressing this need.

The following is recommended -

That Member States review the levels of *literacy and numeracy* being achieved from school education programmes to ensure the levels which are adequate to prepare students to use the technologies required in TVET programmes, currently and in the future.

TVET In Schools

Both developing and developed countries are currently implementing strategies to introduce TVET into schools. The stage at which this introduction is occurring tends to vary, but developing countries particularly see the later years of primary school as the ideal time to formally introduce rural students to TVET. However, for primary and junior secondary students particularly, TVET subjects should be integrated with the more academic subjects so that the total programme is seen as a general education programme for everyone. Workshop participants felt strongly that TVET subjects should be available for all students and not treated as marginal to be undertaken only by those not academically inclined.

Some developed countries currently tend not to introduce TVET subjects into the school curriculum until secondary school, but workshop participants felt that an earlier introduction, particularly in rural communities, would enhance the image of TVET, as well as help provide young people with useful skills at an earlier age.

An issue that arises when you introduce TVET into the school curriculum is «who provides the teaching»? There was general agreement that at primary and junior secondary school levels the school teachers should deliver the TVET subjects. However, this teaching should be supplemented by visits to industry sites and TVET institutions, and if possible, guest appearances by industry practitioners to the school. For senior secondary levels the models vary from TVET subjects taught by the secondary school teachers in a comprehensive high school, to specialist technical high schools, to the model where high school students attend a TVET institution to undertake the TVET component of their school programme.

The following is recommended -

That TVET subjects be integrated into both primary and secondary school curriculum for all students in rural areas as appropriate.

That Member States consider incorporating TVET units into school teacher education programmes and professional development programmes.

Curriculum

For formal TVET programmes, all countries regard curriculum as the basis for the effective delivery of TVET for rural development. In relation to curriculum design and development, the following is recommended -

That all TVET curriculum be designed and developed by curriculum specialists in collaboration with TVET teachers, practitioners and other stakeholders.

That TVET curriculum be developed to meet competency *standards* and provide for *mobility* of workers.

That in relation to the design, structure and content of TVET curriculum to be delivered in rural areas:

- **it must be *relevant* to rural community needs;**
- **there should be sufficient *flexibility* so as to allow for changes and innovations to meet varying rural community needs;**
- **the structure should be *modular* so as to provide for flexibility as well as ease of lateral and vertical articulation to other programmes;**
- **subjects/modules on *communications* and *entrepreneurship* should be a component of all formal programmes (i.e. programmes leading to a qualification);**
- **the curriculum should provide for *future* needs and strategies;**
- **it should be gender sensitive;**
- ***cooperative* implementation should be enhanced;**
- ***integration* of on-job and off-job learning and assessment as well as institution based theory and practice should be provided for and enhanced by the curriculum;**
- **environmentally sensitive practices which lead to *sustainable development* should be facilitated.**

That curriculum for delivery to rural communities be revised and updated regularly.

Human Resources

One of the keys to the successful delivery of TVET in rural communities is the availability of suitably qualified and experienced teachers. However countries are having difficulty recruiting suitable teachers from rural communities and are needing to offer incentives in order to try and attract teachers to move to and stay in some rural locations. These incentives include special monetary allowances and subsidised housing. In some instances teachers are given a guarantee of a transfer to a location in high demand if they spend a nominated period of time in a less popular rural location.

Another issue is the need to provide adequate professional development for TVET teachers in rural communities so they are kept at the forefront of technological developments. There is additional costs associated with keeping teachers in rural locations up to date compared to those in urban locations and governments need to take this into account when determining resourcing policies.

To help ensure constant contact with industry practices and to provide a buffer for changing demand, most countries seek to maintain a balance between permanent teachers and part time teachers who are practitioners in industry.

The following is recommended -

That authorities responsible for TVET ensure that there are suitably qualified and experienced *teachers* in rural areas.

That *professional development* strategies be implemented for TVET teachers in rural areas to ensure they are at the forefront of technological and other developments.

Physical Resources

All countries regard access to suitable facilities and equipment as essential for the effective delivery of formal TVET programmes to rural communities. It is also considered that the image of TVET compared to a university education is adversely affected by the lower quality physical resources often provided for TVET delivery in the past. However, with the technology available today as well as the potential for significant practical skills development to occur in workplaces, physical resource planning needs to match the particular needs being addressed.

The establishment of education and training centres or **learning centres** in strategic rural locations is seen as the most appropriate approach. In developing countries it is strongly recommended that the establishment of these centres be closely integrated with the development of general infrastructure such as electricity, water and telephone services. A total strategy will also involve initiatives to encourage the establishment of new enterprises and the provision of work opportunities.

In more developed countries the basic infrastructure for a learning centre may already exist in say the form of a technical college or campus or agricultural college.

Strategically located learning centres in rural locations in any country should provide for the delivery of formal TVET programmes as well as provide support for an expanding range of informal programmes. Such centres may also serve other purposes such as a technology development centre and/or provide an information office for rural development.

Mobile workshops and teaching units (e.g. sets of laptop computers) may be based at these centres but used to service other rural communities simply by the teacher driving the mobile unit to the new location and utilizing an existing facility such as a school building or farm shed.

With the inclusion of appropriate technology and the application of distance or flexible learning strategies the proposed learning centres may also serve as satellite campuses for a university or large TVET institution which could be rural or urban based.

In all instances it is important that appropriate management systems be introduced and maintained which support the effective use of TVET resources.

In general, rural people are seeking access to education and training close to where they live and work. If the continuing drift of rural people to the large cities is to be arrested, then all countries need to develop strategies which seek to create work opportunities while at the same time providing resources to support the delivery of TVET programmes which complement the work opportunities.

To obtain the funding required to resource the delivery of TVET to rural communities, governments and the communities themselves need to consider all potential funding options. In addition to direct government funding from existing tax revenues suggestions include:

- A special tax for rural TVET.
- An industry tax.
- Semi-commercial/commercial training units and programmes.
- Tuition fees.

In regard to physical resources the following is recommended -

That *learning centres* be established in appropriate rural locations to meet the needs of the specific rural community(s) and where appropriate, the development of these centres be integrated with the development of general infrastructure, enterprises and work opportunities.

That the use of *existing resources* be maximised for the delivery of TVET in rural areas.

That resources be allocated for the construction and equipping of appropriate *mobile* teaching workshops and units.

That all possible sources of *funding* to support the delivery of TVET to rural communities be pursued.

That appropriate *management systems* be introduced and maintained to support the effective use of TVET resources, including communications technology.

Delivery Models

There is general recognition that TVET delivery systems servicing rural communities must be appropriate for the needs of the individuals and the communities as a whole. Requiring rural people to go to large cities to undertake TVET programmes using traditional delivery modes will not assist to arrest the drift to the cities or will not likely enhance rural development.

As with curriculum, delivery modes for TVET must be complementary to the needs of the rural communities being serviced. What is most appropriate for one country or one rural community may not be appropriate for another. The extent of physical infrastructure development, the availability of TVET facilities, the level of basic education and the extent of social and economic development of a community, as well as the types of enterprises providing work opportunities, should all impact on the decision as to the most effective delivery model. In all cases it is important to take a strategic approach and to apply the principles of **community involvement, relevance** and **flexibility.**

There is not one best method for delivering TVET to rural communities but there are models of good practice that others can learn from. Some models relate to the delivery of formal programmes which lead to a recognised qualification while other models reflect delivery of non-formal or informal programmes.

In relation to delivery models the following is recommended -

That a range of appropriate *delivery modes* be adopted for the delivery of TVET in rural areas so as to match the needs of the various student groups and the variable factors impacting on rural communities.

That the *duration* and *timing* of delivery of TVET programs for rural people be determined in consultation with the people concerned.

That member states review the current TVET programme and delivery patterns being implemented by other members in order to learn from examples of best practice.

That rural communities be provided with *access* to a range of programmes to support *non-agricultural* as well as agricultural enterprises.

That delivery strategies for TVET in rural areas provide for an effective *integration* of theory and practice.

That *informal* TVET as well as *formal* TVET in rural communities be encouraged, facilitated where appropriate and recognised.

Participants of the International Workshop on Technical and Vocational Education for Rural Development, Ottawa, Canada, September 1996.

Some examples of delivery models provided by workshop participants are -

- *Theory by correspondence/home study plus telephone contact with a teacher.*
- *Practical skills instructed and assessed by the teacher in the workplace.*
- *Theory by correspondence/home study plus tutorial support made available by teachers visiting different locations at different times.*
- *Practical by 5 or 6 weekend blocks in a technical college, plus work experience.*

- *Short courses for farmers for specific purposes (e.g. tractor maintenance, water pumps etc) - delivered in a learning centre or using a mobile unit.*
- *Theory partly by correspondence and partly face-to-face classes. Practical by work experience with local cooperating enterprises.*
- *Utilising university or technical institutions to do research to develop useful technologies and introduce to rural communities by training the people to adapt, use and maintain (e.g. cooking oil extraction mechanism in Kenya).*
- *Distance learning techniques utilising:*
  - *correspondence notes; and/or*
  - *TV; and/or*
  - *Satellite broadcasts; and/or*
  - *The Internet.*
- *Delivery to satellite centres from an urban based technical institute using various technologies. Local tutorial support provided by local experts and visiting teachers.*
- *Utilising existing community education classes (e.g. in sewing) to introduce other learning, to provide information and determine other needs.*
- *Delivering some modules in a course in face-to-face mode and others by correspondence with tutorial support.*
- *Utilising mobile workshops (e.g. welding, hydraulics, hospitality, electronics, computers) to provide practical training in a range of locations.*
- *Theory lessons provided in local village/town facilities such as a hall or school classroom, or in a learning centre if available.*
- *Use of computer network, hands free telephone connection and facsimile machine for the teacher to run a class for a small number of students in each of several different locations - including private homes.*
- *Facilitating community groups (e.g. farmers) to organize and conduct field days and workshops on relevant issues (e.g. land care practices).*
- *Theory (electronics) by correspondence, computer programme and home study supported by telephone tutorials. Practical by occasional labs supported by 'teacher made' video newsletters - i.e. videos which demonstrate practical techniques are sent to the students and then returned for re-use by the teacher.*
- *Integrate TVET subjects (e.g. agriculture) into school curriculum.*
- *Self-study leading to assessment for formal recognition/qualifications.*

The outcomes of this workshop provide a potentially significant contribution to the UNEVOC project. However, the level of significance of the contribution will depend on the extent to which Member States are prepared to implement the recommendations.

(This report was kindly contributed to the UNEVOC INFO by the author who is Director, Western Institute of TAFE, Orange, NSW, Australia and served as Resource Person for this Workshop. For more information about the Workshop please contact UNESCO Headquarters.)

UNEVOC INFORMATION IN WEB

UNEVOC disseminates information and knowledge related to innovation, ideas and experience in technical and vocational education. This is done through various means, including publications, symposia and workshops. One means of facilitating access to such information is the Internet. Increasingly, information about UNEVOC, its publications, is now available on the WorldWideWeb.

With a WorldWideWeb browser, such as Netscape Navigator, Microsoft Internet Explorer, or Mosaic, the UNEVOC Web Pages can be viewed.

The UNEVOC Web Pages are constantly updated and developed further. The above represents the UNEVOC Home Page as of December 1996.

Contents of the UNEVOC Web Pages

Currently, the following information is available through the UNEVOC Web Pages:

- UNEVOC Work Plan for 1996-1997
- Background of UNEVOC
- Our Network: UNEVOC Directory
- UNEVOC INFO
- Publications
- Forthcoming Events
- Convention on Technical and Vocational Education

Finally, links to other Web sites in technical and vocational education are offered, such as the International Training Centre of the International Labour

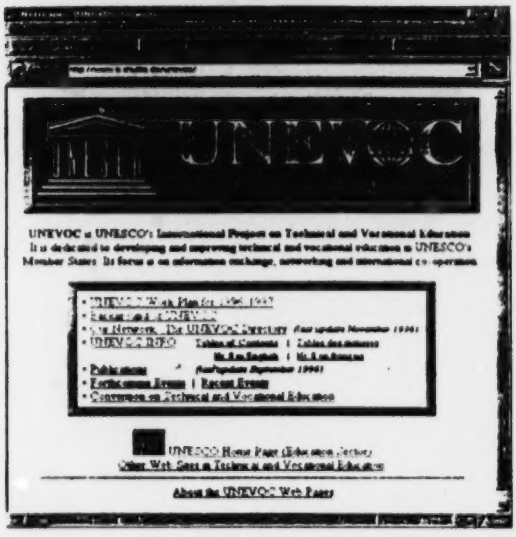
Organization (ILO), the European Training Foundation in Turin, Italy, or the Eric Clearing House (Adult, Career and Vocational Education) in Columbus, Ohio, USA.

Online access

Users of Internet mostly connect, via a modem, to a local provider.

The following site (URL) is the UNEVOC Home Page:
htt://www.b.shuttle.de/unevoc

The UNEVOC Web Pages are also linked to the Home Page of UNESCO's Education Sector:
htt://www.education.unesco.org



From that page, select
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to reach the UNEVOC Home Page.

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Should you have a Personal Computer at your disposal, you will still be able to view our UNEVOC Web pages. You may do this by obtaining the off-line version of the UNEVOC Web pages on floppy disk which is available free from UNEVOC Implementation Unit in Berlin.

The content of this floppy is being updated frequently; UNEVOC Implementation Unit in Berlin will make sure that at any time the latest version will be mailed.

In order to be able to view the UNEVOC Pages, you will need a Web browser software, which is widely available free of charge or at nominal cost only.

Brochure

A Brochure in English «UNEVOC on the WorldWideWeb» is currently being printed. It will soon be disseminated to all UNEVOC Centres. It may be obtained free of charge at UNEVOC Implementation Unit in Berlin (see last page).

IN BRIEF

UNESCO Director-General to attend Conference on Technological Education

Over 400 specialists in development, technological education and modern communications systems from more than 30 countries will meet in Abu Dhabi, the capital of the United Arab Emirates (UAE), next April to discuss the impact of technological education on national development.

Mr. Federico Mayor, Director-General of UNESCO, will attend the conference entitled «Technological Education and National Development» (TEND 97), which has been organized by the Higher Colleges of Technology (HCT) of the UAE from 6 to 8 April 1997, according to an official spokesman for the conference organisers.

Mr. Mayor will deliver the keynote address and the three day conference will undertake a major investigation into the impact that technological education has on national development.

Panels will consider a range of topics within this framework, including:

- approaches to achieving self-sufficiency in the workforce of developing countries as they progress along the path of modernisation;
- the vital relationship between institutions of learning and business and communities;
- new teaching and learning technologies and methodologies;
- ways of maintaining quality in education; and
- major policy issues facing education over the next 20 years.

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The conference spokesman said the HCT had taken the initiative in staging TEND 97 because it was felt that the Higher Colleges' experience meant that they had something to offer countries addressing challenges. At the same time, the HCT is eager to learn from the experience of others.

To register for this important event, contact the conference organisers on fax (9714) 825513.

You can also obtain more information on the conference by logging on to our home page: www.hct.ac.ae./tend97.htm.

Students specializing in Tourism and Hospitality in their training session (Australia).

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